



**Energy Efficiency and Renewable Energy
Federal Energy Management Program**

How to Buy Energy-Efficient Exit Signs

Why Agencies Should Buy Efficient Products

- Executive Order 13123 and FAR section 23.704 direct agencies to purchase products in the upper 25% of energy efficiency, including all models that qualify for the EPA/DOE ENERGY STAR[®] product labeling program.
- Agencies that use these guidelines to buy efficient products can realize substantial operating cost savings and help prevent pollution.
- As the world's largest consumer, the federal government can help "pull" the entire U.S. market towards greater energy efficiency, while saving taxpayer dollars.

Federal Supply Sources:

- Defense Logistics Agency (DLA)
Phone: (800) DLA-BULB
dscp103.dscp.dla.mil/gi/general/light1.htm
- General Services Administration (GSA)
Phone: (817) 978-8679
www.fss.gsa.gov

For More Information:

- DOE's Federal Energy Management Program (FEMP) Help Desk and World Wide Web site have up-to-date information on energy-efficient federal procurement, including the latest versions of these recommendations.
Phone: (800) 363-3732
www.eren.doe.gov/femp/procurement
- Environmental Protection Agency has ENERGY STAR product listings.
Phone: (888) 782-7937
www.energystar.gov
- American Council for an Energy-Efficient Economy (ACEEE) publishes the *Guide to Energy-Efficient Commercial Equipment*, which includes a chapter on lighting.
Phone: (202) 429-0063
aceee.org
- Lighting Research Center's Web site has the ENERGY STAR specification and other valuable information covering exit signs and other lighting systems.
Phone: (518) 276-8716
www.lrc.rpi.edu
- Lawrence Berkeley National Laboratory provided supporting analysis for this recommendation.
Phone: (202) 646-7950

Efficiency Recommendation

Product Type	Recommended	Best Available
Single Face	5 watts or less	1 watt
Double Face	10 watts or less	1 watt

The federal supply sources for exit signs are the Defense Logistics Agency (DLA) and the General Services Administration (GSA). DLA sells exit signs through its *Energy Efficient Lighting* catalog, available on its Web site. GSA offers them through Schedule 99-IV, "Signs," as well as through its on-line shopping network, *GSA Advantage!* Select exit signs that meet the recommended levels. Both DLA and GSA also sell exit sign retrofit kits, which allow conversion of existing signs to energy-efficient light-emitting diode (LED) models.

For exit signs purchased through commercial sources, look for products with the EPA/DOE ENERGY STAR[®] label, all of which meet this Recommendation. For a contractor-supplied exit sign, specify products with the ENERGY STAR[®] label, or with power consumption (in watts) that meets the recommended levels.

Most light-emitting diode (LED) exit signs meet this Efficiency Recommendation for both single and double face configurations. Some compact fluorescent lamp (CFL) exit signs meet the double-face Recommendation; CFL models require lamp replacements about every 2 years compared with an estimated life of 10 years or more for LED lamps.

To ensure adequate visibility, the ENERGY STAR[®] label also requires that exit signs exceed visibility guidelines established by the National Fire Protection Association (NFPA) Life Safety Code 101, and most building code

Where to Find Energy-Efficient Exit Signs



Buyer Tips

requirements. Many LED and CFL signs meet these criteria. Be sure to check compliance with your own state or local codes before selecting exit signs.

Before purchasing exit signs, make sure that the manufacturer's warranty covers replacement of defective parts for at least 5 years from the date of purchase, as required by the ENERGY STAR specification.

Retrofitting existing exit signs may be more economical than replacing entire signs, but proper installation is vital to ensuring adequate visibility. The ENERGY STAR program does not cover retrofit kits.

Retrofits

Exit Sign Cost-Effectiveness Example (Double Face Model)

Performance	Base Model	Recommended Level	Best Available
Power Consumption	40 watts	10 watts	1 watt
Annual Energy Use	350 kWh	88 kWh	9 kWh
Annual Energy Cost	\$21	\$5	\$1
Lifetime Energy Cost	\$160	\$40	\$5
Lifetime Energy Cost Savings ^a	–	\$120	\$155

Definition

Lifetime Energy Cost is the sum of the discounted value of annual energy costs, based on constant usage and an assumed exit sign life of 10 years. Future electricity price trends and a discount rate of 3.4% are based on federal guidelines (effective from April, 2000 to March, 2001).

a) Note that these savings do not include lamp replacement costs, including labor, which are discussed in the text below.

Cost-Effectiveness Assumptions

The Base Model in this example uses two 20-watt incandescent lamps. The Recommended Level sign uses two CFLs, which draw 5 watts each (in combination with their ballasts). The Best Available model uses a 1-watt LED array.

Annual energy use in this example is based on constant use, or 8,760 operating hours per year. The assumed electricity price is 6¢/kWh, the federal average electricity price in the U.S. The calculations are for energy cost savings only, and do not include lamp replacement or labor costs. Considering lamp replacement and labor costs would significantly increase the total savings of a CFL sign relative to an incandescent, as well as the total savings from an LED sign relative to either a CFL or incandescent model. Over the 10-year life of an exit sign, the total number of lamps required would be approximately 30 incandescents, 10 CFLs, or a single LED array.

Using the Cost-Effectiveness Table

In the example shown above, cost-effectiveness is determined solely on energy savings, and excludes benefits from fewer replacement lamps and labor savings. A recommended exit sign with a power consumption of 10 watts is cost-effective if its purchase price is no more than \$120 above the price of the Base Model. The Best Available model, with a power consumption of 1 watt, is cost-effective if its price is no more than \$155 above the price of the Base Model.

What if my Electricity Price is different?

To adjust the Lifetime Energy Cost Savings in the table above for a different electricity price, multiply the dollar figures listed by this ratio: $\left(\frac{\text{Your price in ¢/kWh}}{6.0 \text{ ¢/kWh}} \right)$.

